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EXAMINER

SCHLAIFER, JONATHAN D

ART UNIT PAPER NUMBER

2178

DATE MAILED: 10/12/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/864,156

Applicant(s)

UKRAINCZYK ET AL.

Examiner

Jonathan D. Schlaifer

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 25 May 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-4, 6, 8, 11-16, 19-34, 38-42 and 45-92 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6, 8, 11-16, 19-34, 38-42 and 45-92 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 May 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 5/25/01, 2/2/04
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

1. This action is responsive to communications: Application 09/864,156, filed on 5/25/2001, with Preliminary Amendment on 5/8/2002.
2. Claims 1-4, 6, 8, 11-16, 19-34, 38-42, and 45-92 are pending in the application. Claims 45-92 are new claims from the preliminary amendment. Claims 1-4, 8, 11, 13-15, 19-32, and 38-41 were amended in the preliminary amendment. Claims 1, 13, 48, 56, 72, and 89 are independent claims.

### ***Claim Objections***

3. Claim 2 is objected to because of the following informalities: In line 6 of the claim, “, depending” should not have a comma and should be “depends”. Appropriate correction is required.
4. Claim 33 is objected to because of the following informalities: In line 2 of the claim, “contains” should be “contain”. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claim 48 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In line 9, “substantially unrelated” is indefinite. For purposes of examination, it shall be read as “unrelated”.
6. Claims 85-86 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant

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regards as the invention. In line 1 of each claim, “essentially” is indefinite. For purposes of examination, they shall be read without this word.

7. Claims 91 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In line 1 of the claim, “generally” is indefinite. For purposes of examination, they shall be read without this word.

***Claim Rejections - 35 USC § 101***

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

8. Claim 1-92 rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The methods cited in these claims lack a technological basis.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. **Claims 1, 45, 47-48, 50-60, 62, and 68-70 are rejected under 35 U.S.C. 103(a) as being unpatentable over Giljum et al. (USPN 6,745,238 B1—filing date 3/31/2000), hereinafter Giljum, further in view of Cole et al. (USPN 5,621,857—filing date**

**12/20/1991), hereinafter Cole, further in view of Kleider et al. (USPN 5,930,748—  
filing date 7/11/1997), hereinafter Kleider.**

10. **Regarding independent claim 1**, Giljum discloses: In a system comprising perspectives and categories (in col. 5, lines 15-50, the database is organized into category folders, which are further organized by perspectives), each perspective including at least one category representative of that perspective (it was notoriously well known in the art at the time of the invention that perspectives without categories serve no useful purpose, so it would have been obvious to one of ordinary skill in the art at the time of the invention to have the perspectives have at least one category so as to have the perspectives serve a useful organizational function), a method for classifying at least one item across multiple perspectives, (Giljum states this is that case in col. 5, lines 45-50), said method comprising: associating category features with each category, wherein each of said category features represents one of a plurality of tokens (Giljum discloses that these, specifically files, text, and URLs, are the determinants of tokens in col. 5, lines 25-30). However, Giljum fails to disclose producing a category vector for each category, wherein each category vector includes a weight corresponding to each category feature, said weight indicative of a degree of association between said category feature and said category; associating item features with each item, wherein each of said item features represents one of a plurality of tokens found in said item; producing a feature vector for each item, wherein each feature vector includes said item features with a count corresponding to each item feature, and count indicative of the number of times said item. However, Cole discloses these features in col. 8, line 50—col. 9 line 25 of the invention

in that a recognition and classifying task, which is analogous task, is being performed, and vectors are used to allow successful classification. It would have been obvious to one of ordinary skill in the art at the time of the invention to use vectors in the manner of Cole in the context of Giljum in order to allow successful classification. Furthermore, Giljum fails to disclose multiplying said category vector by said item vector to produce a plurality of category scores for each item; and for each perspective, across multiple perspectives, classifying an item into a category provided said category score exceeds a predetermined threshold. However, Kleider discloses multiplication involving vectors and use of a threshold in a classification task, and it would have been obvious to one of ordinary skill in the art at the time of the invention to use these teachings of Kleider, the context of Giljum in conjunction with the teachings of Cole in order to produce a combined invention that would have had enhanced powers of classification.

11. **Regarding dependent claim 45**, Giljum, Cole, and Kleider fail to disclose that the multiplying includes using at least one attribute of at least one category vector in determining whether to include a document feature of the feature vector in the multiplying. However, it was notoriously well known in the art at the time of the invention that attributes are used to determine how to make decisions related to calculations because they store relevant information, and hence it would have been obvious to one of ordinary skill in the art at the time of the invention to use attributes as the basis for how to make the calculation because they are the repository of the relevant information.

12. **Regarding dependent claim 47**, Giljum, Cole, and Kleider fail to disclose that the perspective to which the category relates determines the value of the at least one attribute. However, it was notoriously well known in the art at the time of the invention that perspectives provide important information about the category, and attributes store important information. It would have been obvious to one of ordinary skill in the art at the time of the invention to store the perspective in an attribute because that is an appropriate and relevant place in which to store it.
13. **Regarding independent claim 48**, it is essentially similar to claim 1 except for the limitation that weights for a category are initially related to weights for other categories of the same perspective but are initially unrelated to weights for categories in different perspectives. However, the weights in the same perspective are inherently related to other weights in the same perspective by virtue of being in the same perspective and unrelated to weights in other perspectives by virtue of being in different perspectives, and hence this limitation is met.
14. **Regarding dependent claim 50**, Giljum, Cole, and Kleider fail to disclose that determining the weight indicating a degree of association between each associated feature and category includes receiving a user input specifying the weight. However, it was notoriously well known in the art at the time of the invention that program data such as weights may be obtained from the user to give the user direct control. It would have been obvious to one of ordinary skill in the art at the time of the invention to have the user input weights to give the user direct control.

15. **Regarding dependent claim 51**, Giljum, Cole, and Kleider fail to disclose deeming a feature to be unassociated with a category if no user input is received specifying the weight corresponding to the feature. However, it was notoriously well known in the art at the time of the invention that a value may default to null if it is not specifically set, for simplicity and consistency's sake. It would have been obvious to one of ordinary skill in the art at the time of the invention to have there be no association between features and categories where there is no user input for simplicity's and consistency's sake.
16. **Regarding dependent claim 52**, Giljum, Cole, and Kleider fail to disclose deeming a feature to be unassociated with a category if a magnitude of a corresponding weight between the feature and the category does not exceed a predetermined threshold value. However, it was notoriously well known in the art at the time of the invention that a value may default to null if it is not above a threshold, to set a basic standard. It would have been obvious to one of ordinary skill in the art at the time of the invention to have there be no association between features and categories if it is not above a threshold to set a basic standard.
17. **Regarding dependent claim 53**, Giljum, Cole, and Kleider fail to disclose specifying the predetermined threshold value, for each perspective, independent of the predetermined threshold value for other perspectives. However, it was notoriously well known in the art at the time of the invention that users may specify key parameters of programs in order to have control over program operation. It would have been obvious to one of ordinary skill in the art at the time of the invention to allow the user to specify the threshold values in order to allow them control over program operation.



18. **Regarding dependent claim 54**, Giljum, Cole, and Kleider fail to disclose that a feature is unassociated with a category if a number of features associated with the category exceeds a predetermined threshold value. However, it was notoriously well known in the art at the time of the invention that one may place limits on values to simplify program control, and therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to exclude features from associations if the number of features exceeds a threshold value in order to simplify program control.
19. **Regarding dependent claim 55**, Giljum, Cole, and Kleider fail to disclose limiting how many categories an item can be classified into within a particular perspective. However, it was notoriously well known in the art at the time of the invention that placing limits on options is a basic principle of program control to simplify program design and operation. It would have been obvious to one of ordinary skill in the art at the time of the invention to limit the number of categories an item can be placed into in order to simplify program design and operation.
20. **Regarding independent claim 56**, it is a combination of the limitations of claims 1 and 13 (the system of perspectives and categories is as in claim 1, the classification is as in claim 13) and may be rejected using a combination of the rationales used to reject the aforementioned claims.
21. **Regarding dependent claim 57**, it is analogous to claim 52 extended into the context of claim 56 and is rejected under similar rationale.
22. **Regarding dependent claim 58**, it is analogous to claim 55 extended into the context of claim 56 and is rejected under similar rationale.

23. **Regarding dependent claim 59**, Giljum, Cole, and Kleider fail to disclose that the identifying features include representations of documents or queries. However, it was notoriously well known in the art at the time of the invention that classified material typically include documents or queries because there is utility in classifying these types of material. It would have been obvious to one of ordinary skill in the art at the time of the invention to classify documents or queries because it is useful to classify documents and queries because it allows for easier retrieval of relevant material.
24. **Regarding dependent claim 60**, Giljum, Cole, and Kleider fail to disclose that the identifying features includes identifying vocabulary relevant to at least one category. However, it was notoriously well known in the art at the time of the invention that vocabulary is used to classify because it sorts material into textually significant groups. It would have been obvious to one of ordinary skill in the art at the time of the invention to use vocabulary to classify because it sorts material into textually significant groups.
25. **Regarding dependent claim 62**, Giljum, Cole, and Kleider fail to disclose receiving user input for determining at least one weight. However, it was notoriously well known in the art at the time of the invention that users may input key pieces of data to allow them control over a program. It would have been obvious to one of ordinary skill in the art at the time of the invention to allow users to input the weights in order to give them control over the program.
26. **Regarding dependent claim 68**, Giljum, Cole, and Kleider fail to explicitly disclose incorporating a dependence between an item's category score for a category representing a first perspective and the item's category score for one or more other categories

representing one or more perspectives different from the first perspective. However, the scores of claim 1 inherently encapsulate a relationship between the scores, which reflects an implicit dependence.

27. **Regarding dependent claim 69**, Giljum, Cole, and Kleider fail to disclose that incorporating the dependence includes, if the item's category score for a category representing a first perspective equals or exceeds a threshold value, then inhibiting classification of the item to one or more other categories representing one or more perspectives different from the first perspective. However, it was notoriously well known in the art at the time of the invention that thresholds may be used in classification to restrict classification in order to produce controlled results in classification. It would have been obvious to one of ordinary skill in the art at the time of the invention to use thresholds in classification in order to produce controlled results in classification.
28. **Regarding dependent claim 70**, it is a specific manifestation of claim 69, and it was notoriously well known in the art at the time of the invention that inhibiting classification may occur by reducing a classification score, and it would have been obvious to one of ordinary skill in the art at the time of the invention to inhibit by reducing a classification score in order to produce controlled results in classification.
29. **Claims 2-3, 61, and 71 are rejected under 35 U.S.C. 103(a) as being unpatentable over Giljum, further in view of Cole, further in view of Kleider, further in view of Asai (USPN 5,257,394—filing date 4/22/1992).**
30. **Regarding dependent claim 2**, Giljum, Cole, and Kleider fail to disclose that the count includes at least one subcount indicative of the number of items the item feature appears

in a particular region of the item, wherein the particular region of the item is a subset of the item taken as a whole; and for first and second categories, in classifying the item in the second category, substituting the at least one subcount for the count of each item feature depends on whether the was classified into the first category. However, Asai describes a classification process within a processor in col. 4, line 40—col. 5, line 65 that involves classifying using a subcount, and multiple counts that depend on one another in order to allow the classification to take place at high speed. It would have been obvious to one of ordinary skill in the art at the time of the invention to integrate Asai's classification technique into the inventions of Giljum, Cole, and Kleider in order to allow classification to take place at high speed.

31. **Regarding dependent claim 3**, Giljum, Cole, and Kleider fail to disclose that for first and second categories, classifying the item into the second category depends at least in part on a determination of whether the item was classified into the first category. However, this limitation is similar to the second limitation of claim 2, and is rejected under similar rationale using Asai's invention.
32. **Regarding dependent claim 61**, limitations of the claim that involve the use of regions in classifying documents are similar to the limitations of claim 2 and hence the claim can be rejected under similar rationale.
33. **Regarding dependent claim 71**, limitations of the claim that involve the use of regions in classifying documents are similar to the limitations of claim 2 and hence the claim can be rejected under similar rationale.

**34. Claims 4 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over**

**Giljum, further in view of Cole, further in view of Kleider, further in view of Stoddart et al. (USPN 4,817,623—filing date 2/18/1986), hereinafter Stoddart.**

**35. Regarding dependent claim 4,** Giljum, Cole, and Kleider fail to disclose comparing a category score for a first item in a first perspective with a category score for said first item in a second perspective; and modifying the category score in the first perspective in response to the category score in the second perspective. However, Stoddart discloses in col. 14, lines 10-55 the comparison and modification of category scores across perspectives. It would have been obvious to one of ordinary skill in the art at the time of the invention to compare and modify category scores across perspectives in the manner of Stoddart in the context of Giljum, Cole, and Kleider in order to increase the resolution of the data-gathering apparatus (see col. 14, lines 25-35).

**36. Regarding dependent claim 6,** Giljum, Cole, Kleider, and Stoddart fail to disclose that the first perspective is an ancestor of said second perspective. However, it was notoriously well known in the art at the time of the invention that a basic principle of inheritance relationships is that ancestors reflect changes in their descendents. It would have been obvious to one of ordinary skill in the art at the time of the invention to have an ancestor reflect changes in its descendents as described in claim 4 in order to maintain appropriate inheritance relationships.

**37. Claims 8 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Giljum, further in view of Cole, further in view of Kleider, further in view of**

**Stoddart, further in view of Murai et al. (USPN 4,817,623—filing date 2/18/1986),  
hereinafter Murai.**

38. **Regarding dependent claim 8**, Giljum, Cole, Kleider, and Stoddart fail to disclose creating an ordered list of category scores for all categories in all perspectives; identifying an item associated with a highest category score in a first perspective; identifying said item in a second perspective; and decreasing the category score of said item in said second perspective. However, Murai discloses an approach to categorized data that is similar to this in col. 21-26, with the aim of enhancing classification. It would have been obvious to one of ordinary skill in the art at the time of the invention to use Murai's approach to categorized data in order to enhance the classification accuracy of Giljum, Cole, Kleider, and Stoddart.
39. **Regarding dependent claim 11**, Giljum, Cole, Kleider, Stoddart, and Murai fail to disclose repeating the identifying and decreasing for every perspective. However, it was notoriously well known in the art at the time of the invention that if a procedure is useful once, it may often be performed on a universal basis for repeated utility. It would have been obvious to one of ordinary skill in the art at the time of the invention to repeat the method of claim 8 in order to gain the repeated utility of performing it on a universal basis.
40. **Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Giljum, further in view of Cole, further in view of Kleider, further in view of Inazumi (USPN 6,151,592—filing date 1/20/1998).**

41. **Regarding dependent claim 12**, Giljum, Cole, and Kleider fail to disclose that the weight corresponding to said concept node feature is between  $-1$  and  $1$ . However, Inazumi discloses that weights for a neural network may be between  $-1$  and  $1$  in col. 15, lines 40-55 in order to keep them in a normalized range. It would have been obvious to one of ordinary skill in the art at the time of the invention to keep the weights in Giljum, Cole, and Kleider, between  $-1$  and  $1$  in the manner of Inazumi in order to keep them in a normalized range.
42. **Claims 13-15, 19-21, 26, 31, and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cole**
43. **Regarding independent claim 13**, Cole discloses a method for associating at least one of a plurality of features with at least one of a plurality of categories (in the Abstract, lines 1-25, voice data is classified), said method comprising at least one of manually or automatically associating at least one of said plurality of features to at least a first category (in Abstract, lines 1-25, speech is recognized or classified). Cole fails to disclose that said plurality of features contributing to a decision to classify a document or query item into said at least first category. However, it was notoriously well known in the art at the time of the invention that a speech recognition program could recognize a recorded speech file or one retrieved by a query to allow delayed speech recognition, and it would have been obvious to one of ordinary skill in the art at the time of the invention to use this construction with Cole's invention to allow delayed speech recognition.
44. **Regarding dependent claim 14**, Cole discloses classifying at least one item into said at least one category, provided the item includes a predetermined number of said plurality

of features associated with said category (see Abstract, lines 1-25, the speech is recognized into letters by features)

45. **Regarding dependent claim 15**, Cole discloses at least one of manually or automatically associating at least one of a plurality of attributes with at least one of said plurality of features, said plurality of attributes contributing to a decision to classify an item into said at least one category. (The letters, according to Abstract 1-30, are assigned probability attributes).
46. **Regarding dependent claim 19**, Cole fails to disclose classifying an item into a category, provided the item does not contain a feature whose association with said category has a RejectConcept attribute. However, it was notoriously well known in the classification art at the time of the invention that items may be specially flagged as not being in specific categories so as to avoid misclassification. It would have been obvious to one of ordinary skill in the art at the time of the invention to use a RejectConcept attribute in order to avoid misclassification.
47. **Regarding dependent claim 20**, Cole fails to disclose using the presence of a feature in an item for classifying the item that contains the feature or a morphological variant of the feature into a category, provided the feature contains an attribute associated with the category that declares the feature to be morphologically variable. However, it was notoriously well known in the art at the time of the invention that an attribute accepting morphological variability could be used to accept morphological variants in order to permit flexibility in the classification scheme. It would have been obvious to one of



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ordinary skill in the art at the time of the invention to use an attribute accepting morphological variability in order to permit flexibility in the classification scheme.

48. **Regarding dependent claim 21**, Cole fails to disclose using the presence of a feature in an item for classifying the item that contains the feature into a category, provided the feature contains an attribute associated with the category that declares the feature to be morphologically invariant. However, it was notoriously well known in the art at the time of the invention that if an attribute insisting on morphological invariance was used, then the item would have to be an exact match when classifying. It would have been obvious to one of ordinary skill in the art at the time of the invention to insist upon an exact match when classifying if there is an attribute for morphological invariance to maintain consistency.

49. **Regarding dependent claim 26**, Cole fails to disclose classifying at least one item into at least one of said categories, provided the item contains a feature who association with said at least one category has a DirectHit attribute. However, it was notoriously well known in the classifying art at the time of the invention that items may be tagged for specific classification into specific categories. It would have been obvious to one of ordinary skill in the art at the time of the invention to use a DirectHit attribute to tag items for specific classification into specific categories to provide greater control over the classification process.

50. **Regarding dependent claim 31**, Cole discloses the use of an association vector with weights in col. 8, line 50—col. 9, line 25.

51. **Regarding dependent claim 40**, Cole fails to disclose a method further comprising setting an attribute indicating that said feature is FilteredOut, provided said feature has been manually or automatically filtered out of a classification. However, it was notoriously well known in the art at the time of the invention that attributes indicate relevant data about features, and since filtering is relevant, important data, it would have been obvious to one of ordinary skill in the art at the time of the invention to represent it via an attribute.
52. **Claims 16 and 32-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cole, further in view of McInerney et al. (USPN 5,325,333—filing date 6/28/1993).**
53. **Regarding dependent claim 16**, Cole fails to disclose determining whether said at least one feature was manually associated to said at least first category; and associating an attribute with said at least one feature that indicates that the feature was Edited. However, McInerney, in col. 10, lines 20-55 has an IsSynthetic attribute that is functionally equivalent to the Edited attribute of the claim, that is used to help control programmer access to program data. It would have been obvious to one of ordinary skill in the art at the time of the invention to use an Edited attribute in the manner of McInerney in the context of Cole in order to help control programmer access to program data.
54. **Regarding dependent claim 32**, Cole fails to disclose determining whether said weight was manually assigned to said feature; and associating an attribute with said feature that indicates whether the weight was WeightEdited. However, McInerney, in col. 10, lines 20-55 has an IsSynthetic attribute that is functionally equivalent to the WeightEdited

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attribute of the claim, that is used to help control programmer access to program data. It would have been obvious to one of ordinary skill in the art at the time of the invention to use an Edited attribute in the manner of McNerney in the context of Cole in order to help control programmer access to program data.

55. **Regarding dependent claim 33**, Cole fails to disclose at least one of manually or automatically replacing a value for said weight with another value, provided the feature does not contain an attribute associated with the category that declares the feature to be WeightEdited. However, McNerney, in col. 10, lines 20-55 with the IsSynthetic attribute implies that where IsSynthetic is not true, values can be programmatically edited. Furthermore, it was notoriously well known in the art at the time of the invention that a programmer may alter data values manually if he or she so chooses. It would have been obvious to one of ordinary skill in the art at the time of the invention to alter weight values, both to reflect the value of WeightEdited and to allow the programmer flexibility.
56. **Regarding dependent claim 34**, Cole and McNerney fail to disclose manually replacing a value for said weight with another value, provided the feature contains an attribute associated with the category that declares the feature to be WeightEdited. However, it was notoriously well known in the art at the time of the invention that a programmer may alter data values manually if he or she so chooses. It would have been obvious to one of ordinary skill in the art at the time of the invention to alter weight values, both to reflect the value of WeightEdited and to allow the programmer flexibility.
57. **Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cole, further in view of Zamora et al. (USPN 4,833,610—filing date 3/7/1988).**

58. **Regarding dependent claim 22**, Cole fails to disclose using the presence of a feature in an item for avoiding classifying the item that contains a morphological variant of a feature into a category, provided the feature contains an attribute associated with the category that declares the feature to be morphologically invariant. However, Zamora, in the Abstract, lines 1-30, discloses the screening of morphological variants of a feature from morphological matches. It would have been obvious to one of ordinary skill in the art at the time of the invention to avoid classifying morphological variants when the attribute is morphologically invariant, in the manner of Zamora.

59. **Claims 23-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cole, further in view of Walls et al. (USPN 5,835,918—filing date 7/1/1996).**

60. **Regarding dependent claim 23**, Cole fails to disclose using the presence of a feature in an item for classifying the item that contains a feature or case variant of the feature into a category, provided the feature contains an attribute associated with the category that declares the feature to be case insensitive. However, Walls discusses case insensitive attributes in col. 5, lines 50-60 as being adjuncts to a more functional help system. It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate case insensitive functionality into Cole in the manner of Walls because it would allow the incorporation of a help system.

61. **Regarding dependent claim 24**, it restates limitations of claim 23 and is rejected under similar rationale.

62. **Regarding dependent claim 25**, Cole fails to disclose using the presence of a feature in an item in avoiding classifying the item that contains a case variant of a feature into a

category, provided the feature contains an attribute associated with the category that declares the feature to be case invariant. However, Walls discusses case insensitive attributes in col. 5, lines 50-60 as being adjuncts to a more functional help system. Also, it was notoriously well known in the art at the time of the invention that case invariant is the opposite behavior to this, and that it is valuable to offer the opposite behavior for exact case matching. It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate case invariant functionality into Cole with reference to Walls because it would have allowed for exact case matching.

**63. Claims 27-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cole, further in view of Togami (JP407160658A—Application Date 12/7/1993).**

**64. Regarding dependent claim 27,** Cole fails to disclose using an Overlap attribute of a first feature to determine whether to use the presence of the first feature in an item, wherein said first feature overlaps a second feature in the item, in classifying the item that contains the first feature into a category. However, Togami discloses such use of an overlap attribute in the Abstract of the patent (see Constitution part). It would have been obvious to one of ordinary skill in the art at the time of the invention to use an overlap attribute to reduce classification error.

**65. Regarding dependent claim 28,** since claim 27 uses an attribute which is overlap sensitive, this claim represents the complementary feature, being overlap insensitive, and it would have been obvious to one of ordinary skill in the art at the time of the invention to use the complementary feature because it was notoriously well known in the art at the

time of the invention that if one uses a feature use of the complementary feature permits greater flexibility for the invention.

66. **Regarding dependent claims 29-30**, these two claims represent the two choices by which the invention may be constructed: either overlapping features are or are not used for classifying features. Hence, it would have been obvious to one of ordinary skill in the art at the time of the invention to use or not use overlapping features for classifying features, and it would have been optimal to offer both for greatest flexibility.
67. **Claim 38 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cole, further in view of Fein et al. (USPN 5,924,108—filing date 3/29/1996), hereinafter Fein.**
68. **Regarding dependent claim 38**, Cole fails to disclose determining whether at least one of said plurality of features is a stop word; and setting an attribute indicating that said feature is a stop word. However, Fein's Claim 3 (see col. 11, lines 10-15), reveals recognition and processing of stop words. It would have been obvious to one of ordinary skill in the art at the time of the invention to process stop words because they reveal the structure of the material being classified.
69. **Claim 39 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cole, further in view of Rongley (USPN 5,758,322—filing date 12/9/1994).**
70. **Regarding dependent claim 39**, Cole fails to disclose a method comprising: at least one of manually or automatically determining a scope of at least one of said plurality of features; and setting an attribute indicating that said at least one feature is for queries only, or for documents only, or for both. However, Rongley, in col. 6, line 55—col. 7, line 25, discloses a "listening" feature which automatically determines and sets querying

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parameters which determine the scope of inputted features. It would have been obvious to one of ordinary skill in the art at the time of the invention to use Rongley's "listening" feature in conjunction with Cole's invention to hone in on specific salient features.

**71. Claim 41 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cole, further in view of Quinn (USPN 5,761,385—filing date 9/5/1995).**

**72. Regarding dependent claim 41,** Cole fails to disclose a method further comprising multiplying said weight by a scaling parameter, provided the decision to classify the item into said category was based on at least one feature automatically associated with the category. However, Quinn discloses such use of a scaling parameter with the benefit of improving classification accuracy in col. 4, line 40—col. 5, line 10. It would have been obvious to one of ordinary skill in the art at the time of the invention to use a scaling parameter as in Quinn in the context of Cole in order to improve classification accuracy.

**73. Claim 42 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cole, further in view of Quinn, further in view of Inazumi.**

**74. Regarding dependent claim 42,** Cole and Quinn fail to disclose that the scaling parameter is between 0 and 1. However, if one assumes that the weights are between -1 and 1, as Inazumi supports in the rejection of Claim 12, it was notoriously well known in the art at the time of the invention that keeping the scaling parameter between 0 and 1 would guarantee that the weights would remain within an allowable range. It would have been obvious to one of ordinary skill in the art at the time of the invention to keep the weights within an allowable range.

75. **Claim 46 is rejected under 35 U.S.C. 103(a) as being unpatentable over Giljum, further in view of Cole, further in view of Kleider, further in view of Fein.**
76. **Regarding dependent claim 46,** Giljum, Cole, and Kleider do not disclose using at least one of: a Stop attribute to indicate whether a feature must constitute something other than a stop word to be included in the multiplying; a Case attribute to indicate whether a feature must match a letter case specification to be included in the multiplying; a Stemming attribute to indicate whether a feature includes stemmed word forms to be included in the multiplying; and a Learned attribute to indicate how a human-specified feature is to be included in the multiplying. However, Fein discloses the processing of stop words, which would lead naturally to the use of a stop word attribute. It would have been obvious to one of ordinary skill in the art at the time of the invention to use a stop attribute because stop words are indicative of the overall structure of material to be classified.
77. **Claims 49 and 63-67 are rejected under 35 U.S.C. 103(a) as being unpatentable over Giljum, further in view of Cole, further in view of Kleider, further in view of Murphy (USPN 5,073,867—filing date 10/3/1989).**
78. **Regarding dependent claim 49,** Giljum, Cole, and Kleider fail to disclose that determining the indicating a degree of associating between each associated feature and category includes using the corresponding feature's distribution in training data items tagged to categories from the same perspective as the category being associated with the corresponding feature. However, Murphy, in col. 1, line 20—col. 2, line 15 discloses the use of a neural network that fits this limitation, with the advantage of progressively



accurate classification as it is trained. It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate Murphy's trained neural network into Giljum, Cole, and Kleider in order to gain the advantage of progressively accurate classification.

79. **Regarding dependent claim 63**, Giljum, Cole, and Kleider fail to disclose statistically determining at least one weight using training data. However, Murphy, in col. 1, line 20—col. 2, line 15 discloses the use of a neural network that fits this limitation, with the advantage of progressively accurate classification as it is trained. It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate Murphy's trained neural network into Giljum, Cole, and Kleider in order to gain the advantage of progressively accurate classification.
80. **Regarding dependent claim 64**, Giljum, Cole, and Kleider disclose the use of weights (see rejection of claim 1), but do not specify whether the source is automated, user-input, or a combination. However, Murphy, in col. 1, line 20—col. 2, line 15 discloses the use of a neural network that fits the limitation of automated processing of training data, with the advantage of progressively accurate classification as it is trained. It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate Murphy's trained neural network into Giljum, Cole, and Kleider in order to gain the advantage of progressively accurate classification.
81. **Regarding dependent claim 65**, Giljum, Cole, Kleider, and Murphy fail to disclose specifying, for each perspective, a degree for combining automated processing of training data and human-input data for weights associated with categories representative of that

perspective. However, logic dictates that such a degree would be necessary because input must be automatically processed or human-generated, and the system must be programmed to know what values to process. Hence, it would have been obvious to one of ordinary skill in the art at the time of the invention to have a programmed degree of whether to use automatic or human-generated data because the system could not function without such a setting.

82. **Regarding dependent claim 66**, Giljum, Cole, and Kleider fail to disclose modifying weights initially associating features with one or more categories representing a first perspective based on other weights associating features with one or more other categories representing one or more perspectives different from the first perspective. However, Murphy, in col. 1, line 20—col. 2, line 15 discloses the use of a neural network that fits the limitation of automated processing of training data, with the advantage of progressively accurate classification as it is trained. The automated training fits the limitation of the claim, because data from multiple categories interacts. It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate Murphy's trained neural network into Giljum, Cole, and Kleider in order to gain the advantage of progressively accurate classification.

83. **Regarding dependent claim 67**, Giljum, Cole, and Kleider fail to disclose that the modifying weights includes, if a features's initial weights indicates that the feature is strongly correlated with at least one category in a first perspective and weakly correlated to the categories of different perspectives, that doing at least one of: reducing the feature's weights to the categories of the different perspectives; and increasing the

features weight to the category of the first perspectives. However, Murphy, in col. 1, line 20—col. 2, line 15 discloses the use of a neural network that fits the limitation of automated processing of training data, with the advantage of progressively accurate classification as it is trained. The automated training fits the limitation of the claim, because those modifications reflect how a neural network is trained. It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate Murphy's trained neural network into Giljum, Cole, and Kleider in order to gain the advantage of progressively accurate classification.

**84. Claims 72-74, 76, and 78-91 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cole, further in view of Murphy.**

**85. Regarding independent claim 72,** Cole discloses a method for classifying items to categories (in the Abstract, lines 1-25, voice data is classified). Cole fails to disclose receiving user-input defining all associations between classification features and categories; and statistically determining weights corresponding to the user-defined associations, each weight indicating a degree to which the associations' feature identifies the association's category and discriminates against other categories. However, it was notoriously well known in the art at the time of the invention that users may input program data in order to have direct control over program operation, so it would have been obvious to one of ordinary skill in the art at the time of the invention to have the user input the association data to allow direct control over program operation. Also, Murphy, in col. 1, line 20—col. 2, line 15 discloses the use of a neural network that fits the limitation of statistically determining weights, with the advantage of progressively

accurate classification as it is trained. It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate Murphy's trained neural network into Cole in order to gain the advantage of progressively accurate classification.

86. **Regarding dependent claim 73**, Cole and Murphy fail to disclose identifying candidate feature in documents or queries, in which the candidate features include words or phrases in the documents or queries. It was notoriously well known in the art at the time of the invention that classifiers often classify documents, whose parts are words or phrases, because classification speeds retrieval and processing of documents.
87. **Regarding dependent claim 74**, Cole discloses in the Abstract lines 1-30, the use of scores for letters, which are attributes for the features.
88. **Regarding dependent claim 76**, Cole's use of scores for letters, in the Abstract lines 1-30, could obviously be used to categorize the letters into groups of more or less fidelity of recognition, since it was notoriously well known in the art at the time of the invention that recognition fidelity can be categorized by degree of fidelity in order to organize it in a manageable manner, so it would have been obvious to one of ordinary skill in the art at the time of the invention to categorize recognition fidelity by degree of fidelity in order to organize it in a manageable manner
89. **Regarding dependent claim 78**, Cole and Murphy fail to disclose receiving user input for overriding at least one of the computer weights indicating a strength of the association of a feature to a category. However, it was notoriously well known in the art at the time of the invention that users may override program features to give them greater control over program operation. It would have been obvious to one of ordinary skill in the art at

the time of the invention to allow users to override program features to give them greater control over program operation.

90. **Regarding dependent claim 79**, Cole and Murphy fail to disclose that the overriding at least one of the computed weights includes increasing the weight's strength of association of a feature and a category. However, it was notoriously well known in the art at the time of the invention that overriding associations can involve strengthening or weakening them (because these are the two things one can do when changing them). It would have been obvious to one of ordinary skill in the art at the time of the invention to allow strengthening because it would have given users greater control over program operation.
91. **Regarding dependent claim 80**, Cole fails to disclose that the statistically determining weights is based at least in part on how often the associations' features are present in a set of training items. However, Murphy, in col. 1, line 20—col. 2, line 15 discloses the use of a neural network that fits the limitation of training based on frequency of association (that is how a neural network is trained), with the advantage of progressively accurate classification as it is trained. It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate Murphy's trained neural network into Cole in order to gain the advantage of progressively accurate classification.
92. **Regarding dependent claim 81**, Cole and Murphy fail to disclose that determining the weight indicating a degree of association between each associated feature and category includes receiving a user input specifying the weight. However, it was notoriously well known in the art at the time of the invention that users may control data entry to give them control over program operation. It would have been obvious to one of ordinary skill

in the art at the time of the invention to allow users to control the weights to give them control over program operation.

93. **Regarding dependent claim 82**, Cole and Murphy fail to disclose deeming a feature to be unassociated with a category if no user input is received specifying the weight corresponding to the feature. However, it was notoriously well known in the art at the time of the invention that a weight of association may default to zero if none is specified. It would have been obvious to one of ordinary skill in the art at the time of the invention to have the weight of association default to zero because otherwise an association might be assumed where there is none.
94. **Regarding dependent claim 83**, Cole and Murphy fail to disclose receiving user input for determining at least one weight. However, it was notoriously well known in the art at the time of the invention that users may control data entry to give them control over program operation. It would have been obvious to one of ordinary skill in the art at the time of the invention to allow users to control the weights to give them control over program operation.
95. **Regarding dependent claim 84**, Cole fails to disclose that the statistically determining weights is based at least in part on how often the associations' features are present in a set of training items. However, Murphy, in col. 1, line 20—col. 2, line 15 discloses the use of a neural network that fits the limitation of statistical training (that is how a neural network is trained), with the advantage of progressively accurate classification as it is trained. It would have been obvious to one of ordinary skill in the art at the time of the

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invention to incorporate Murphy's trained neural network into Cole in order to gain the advantage of progressively accurate classification.

96. **Regarding dependent claim 85**, Cole discloses in the Abstract, lines 1-30, the classification of voice documents, which are documents associated with a category.
97. **Regarding dependent claim 86**, Cole fails to disclose that the training data consists of at least one user-specified association between a feature and a category. However, Murphy, in col. 1, line 20—col. 2, line 15 discloses the use of a neural network that must use user-specified training material (that is how a neural network is trained), with the advantage of progressively accurate classification as it is trained. It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate Murphy's trained neural network into Cole in order to gain the advantage of progressively accurate classification.
98. **Regarding dependent claim 87**, Cole discloses the use of weights (see rejection of claim 72), but do not specify whether the source is automated, user-input, or a combination. However, Murphy, in col. 1, line 20—col. 2, line 15 discloses the use of a neural network that fits the limitation of automated processing of training data, with the advantage of progressively accurate classification as it is trained. It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate Murphy's trained neural network into Giljum, Cole, and Kleider in order to gain the advantage of progressively accurate classification.
99. **Regarding dependent claim 88**, Cole and Murphy fail to disclose specifying, for each perspective, a degree for combining automated processing of training data and human-

input data for weights associated with categories representative of that perspective.

However, logic dictates that such a degree would be necessary because input must be automatically processed or human-generated, and the system must be programmed to know what values to process. Hence, it would have been obvious to one of ordinary skill in the art at the time of the invention to have a programmed degree of whether to use automatic or human-generated data because the system could not function without such a setting.

100. **Regarding independent claim 89**, it is essentially similar to claim 72 except for its differentiation between user-defined and machine-defined association. The basic task of classification is disclosed in Cole's Abstract, lines 1-30. Cole does not disclose a differentiation between user-defined and machine-defined association. However, the two types of association are outlined in claims 83 and 84, and the claim may be rejected in a manner similar to the rejection of these two claims.

101. **Regarding dependent claim 90**, Cole and Murphy fail to disclose controlling relative contributions of the weights corresponding to the user-defined associations and the weights corresponding to the machine-defined associations. However, it was notoriously well known in the art at the time of the invention that if two forces are controlling an allocation system, their relative contributions must be controlled. It would have been obvious to one of ordinary skill in the art at the time of the invention to control the relative contributions of the weights in order to have an appropriate balance of the degree of contribution.



102. **Regarding dependent claim 91**, Cole and Murphy fail to disclose that the controlling includes obtaining a greater relative contribution of the user-defined associations with respect to the machine-defined associations. However, it was notoriously well known in the art at the time of the invention that such a relationship would give the user greater control over the system. It would have been obvious to one of ordinary skill in the art at the time of the invention to have the user-defined associations be more potent so as to give the user more control over the system.
103. **Claim 75 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cole, further in view of Murphy, further in view of Haimowitz et al. (USPN 5,819,291—8/23/1996), hereinafter Haimowitz.**
104. **Regarding dependent claim 75**, Cole and Murphy fail to disclose an Exact Match attribute, or any of the other alternatives provided by the claim. However, Haimowitz discloses an Exact Match attribute in col. 6, line 40—col. 7, line 5 with the benefit that only the strongest matches can be preserved. It would have been obvious to one of ordinary skill in the art at the time of the invention to use an ExactMatch attribute to preserve only the strongest matches.
105. **Claims 77 rejected under 35 U.S.C. 103(a) as being unpatentable over Cole, further in view of Murphy, further in view of Fein.**
106. **Regarding dependent claim 77**, Cole and Murphy fail to disclose a Stop attribute indicating whether the feature is a stop word, or any of the other alternatives for attributes provided by the claim. However, Fein's Claim 3 (see col. 11, lines 10-15), reveals recognition and processing of stop words. It would have been obvious to one of

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ordinary skill in the art at the time of the invention to process stop words because they reveal the structure of the material being classified, which would have required the use of a Stop attribute.

107. **Claim 92 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cole, further in view of Murphy, futher in view of Giljum.**

108. **Regarding dependent claim 92**, Cole and Murphy fail to disclose that the classifying includes classifying the items to categories spanning multiple perspectives. However, Giljum allows this. (Giljum states this is that case in col. 5, lines 45-50) It would have been advantageous to combind Giljum with Col and Murphy because it would have allowed for more sophisticated item classification.

#### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

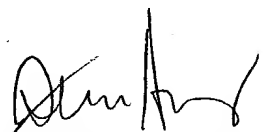
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jonathan D. Schlaifer whose telephone number is (571) 272-4129. The examiner can normally be reached on 8:30-5:00, M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Hong can be reached on (571) 272-4124. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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